Agency for Healthcare Research and Quality
Advancing Excellence in Health Care

NATIONAL QUALITY MEASURES CLEARINGHOUSE

General

Title

Diagnostic imaging: percentage of final reports for ultrasound studies of the pelvis for pre-menopausal women aged 18 and older with no known ovarian disease with a simple ovarian cyst less than 5.0 cm noted incidentally with follow-up imaging recommended.

Source(s)

American College of Radiology (ACR), American Medical Association-convened Physician Consortium for Performance ImprovementÂ® (PCPIÂ®), National Committee for Quality Assurance (NCQA). Diagnostic imaging performance measurement set. Reston (VA): American College of Radiology (ACR); 2015 Feb. 58 p. [89 references]

Measure Domain

Primary Measure Domain

Clinical Quality Measures: Process

Secondary Measure Domain

Does not apply to this measure

Brief Abstract

Description

This measure is used to assess the percentage of final reports for ultrasound studies of the pelvis for pre-menopausal women aged 18 and older with no known ovarian disease with a simple ovarian cyst less than 5.0 cm noted incidentally with follow-up imaging recommended.

Rationale

Simple ovarian cysts are a common finding in ultrasound studies. A study by Hui et al. (2014) found simple ovarian cysts in 23% of pelvic ultrasound studies. Evidence shows that approximately 70% of small simple ovarian cysts resolve spontaneously (Modesitt et al., 2003). Additionally, small simple ovarian cysts have an extremely low malignancy rate of less than 1% (American College of Obstetricians and Gynecologists [ACOG], 2007; Valentin et al., 2013). Due to low malignancy and high resolution rates,

follow-up of these small cysts is not recommended (Johnson et al., 2011; Berland et al., 2014; Levine et al., 2010).

The following evidence statements are quoted verbatim from the referenced clinical guidelines and other references:

In women of reproductive age:

> Cysts less than or equal to 3cm: Normal physiologic findings; at the discretion of the interpreting physician whether or not to describe them in the imaging report; do not need follow up.
> Cysts greater than 3 and less than or equal to 5 cm: Should be described in the imaging report with a statement that they are almost certainly benign; do not need follow up (Levine et al., 2010).

Simple cysts and hemorrhagic cysts in women of reproductive age are almost always physiologic. Small simple cysts in postmenopausal women are common, and clinically inconsequential. Ovarian cancer, while typically cystic, does not arise from these benign-appearing cysts. After a good quality ultrasound in women of reproductive age, don't recommend follow-up for a classic corpus luteum or simple cyst less than 5 cm in greatest diameter. Use 1 cm as a threshold for simple cysts in postmenopausal women (American College of Radiology [ACR], 2012).

Characterization of an adnexal mass as a cyst is important for management. Ultrasound (US) identification of a simple cyst establishes a benign process in 100% of premenopausal women and in 95% to 99% of postmenopausal women. A recent consensus conference at the Society of Radiologists in Ultrasound in 2009 reviewed the management of asymptomatic ovarian and other adnexal cysts. Most cysts in premenopausal women are functional in nature and will resolve spontaneously. Most ACR Appropriateness Criteria® 10 Clinically Suspected Adnexal Mass nonfunctional cysts in premenopausal women with classically complex, but benign, US features (such as endometriomas, simple cysts, teratomas, and hydrosalpinges) measuring less than 5 cm in diameter have been shown to remain unchanged during long-term follow-up. Therefore, it is possible to manage these lesions safely by US follow-up rather than surgical intervention in asymptomatic women (Harris et al., 2012).

Simple cysts up to 10 cm in diameter on ultrasound findings are almost universally benign and may safely be followed without intervention, even in postmenopausal patients (ACOG, 2007).

In asymptomatic women with pelvic masses, whether premenopausal or postmenopausal, transvaginal ultrasonography is the imaging modality of choice. No alternative imaging modality has demonstrated sufficient superiority to transvaginal ultrasonography to justify its routine use (ACOG, 2007).

Evidence for Rationale

American College of Obstetricians and Gynecologists (ACOG). Management of adnexal masses. Washington (DC): American College of Obstetricians and Gynecologists (ACOG); 2007 Jul. 14 p. (ACOG practice bulletin; no. 83). [116 references]

American College of Radiology (ACR), American Medical Association-convened Physician Consortium for Performance ImprovementÂ® (PCPIÂ®), National Committee for Quality Assurance (NCQA). Diagnostic imaging performance measurement set. Reston (VA): American College of Radiology (ACR); 2015 Feb. 58 p. [89 references]

American College of Radiology (ACR). Five things physicians and patients should question. Philadelphia (PA): ABIM Foundation; 2012 Apr 4. 2 p.

Berland LL, Silverman SG, Megibow AJ, Mayo-Smith WW. ACR Members' Response to JACR White Paper on the Management of Incidental Abdominal CT Findings. J Am Coll Radiol. 2014 Jan;11(1):30-5. PubMed

Harris RD, Javitt MC, Glanc P, Brown DL, Dubinsky T, Harisinghani MG, Khati NJ, Kim YB, Mitchell DG, Pandharipande PV, Pannu HK, Podrasky AE, Royal HD, Shipp TD, Siegel CL, Simpson L, Wall DJ, Wong-You-Cheong JJ, Zelop CM, Expert Panel on Women's Imaging. ACR Appropriateness CriteriaÂ® clinically suspected adnexal mass. Reston (VA): American College of Radiology (ACR); 2012. 13 p. [44 references]

Hui JS, Kramer DJ, Blackmore CC, Hashimoto BE, Coy DL. A quality improvement initiative to reduce unnecessary follow-up imaging for adnexal lesions. J Am Coll Radiol. 2014 Apr;11(4):373-7. PubMed

Johnson PT, Horton KM, Megibow AJ, Jeffrey RB, Fishman EK. Common incidental findings on MDCT: survey of radiologist recommendations for patient management. J Am Coll Radiol. 2011 Nov;8(11):762-7. PubMed

Levine D, Brown DL, Andreotti RF, Benacerraf B, Benson CB, Brewster WR, Coleman B, Depriest P, Doubilet PM, Goldstein SR, Hamper UM, Hecht JL, Horrow M, Hur HC, Marnach M, Patel MD, Platt LD, Puscheck E, Smith-Bindman R. Management of asymptomatic ovarian and other adnexal cysts imaged at US: Society of Radiologists in Ultrasound Consensus Conference Statement. Radiology. 2010 Sep;256(3):943-54. PubMed

Modesitt SC, Pavlik EJ, Ueland FR, DePriest PD, Kryscio RJ, van Nagell JR. Risk of malignancy in unilocular ovarian cystic tumors less than 10 centimeters in diameter. Obstet Gynecol. 2003 Sep;102(3):594-9. PubMed

Valentin L, Ameye L, Franchi D, Guerriero S, Jurkovic D, Savelli L, Fischerova D, Lissoni A, Van Holsbeke C, Fruscio R, Van Huffel S, Testa A, Timmerman D. Risk of malignancy in unilocular cysts: a study of 1148 adnexal masses classified as unilocular cysts at transvaginal ultrasound and review of the literature. Ultrasound Obstet Gynecol. 2013 Jan;41(1):80-9. PubMed

Primary Health Components

Incidental simple ovarian cyst; pelvic ultrasound studies; pre-menopause; follow-up imaging

Denominator Description

All final reports for ultrasound studies of the pelvis for women aged 18 and older with a simple ovarian cyst less than 5.0 cm noted (see the related "Denominator Inclusions/Exclusions" field)

Numerator Description

Final reports of ultrasound studies of the pelvis with follow-up imaging recommended

Evidence Supporting the Measure

Type of Evidence Supporting the Criterion of Quality for the Measure

A clinical practice guideline or other peer-reviewed synthesis of the clinical research evidence

A formal consensus procedure, involving experts in relevant clinical, methodological, public health and organizational sciences

One or more research studies published in a National Library of Medicine (NLM) indexed, peer-reviewed journal

Additional Information Supporting Need for the Measure

Importance of Topic

As imaging technology continues to advance, the United States healthcare system has seen an increase in both the type and frequency of imaging studies being performed. The increase in utilization of imaging studies is accompanied by a corresponding increase in cost and exposure to radiation for both patients and healthcare professionals.

- From 1980 to 2006, the number of radiologic procedures performed in the United States showed a ten-fold increase while the annual per-capita effective dose from radiologic and nuclear medicine procedures increased by 600% (Mettler et al., 2009).
- From 1996 to 2010, the number of computerized tomographic (CT) examinations tripled, while the number of ultrasounds nearly doubled (Smith-Bindman et al., 2012).
- From 1996 to 2010, advanced diagnostic imaging (i.e., CT, magnetic resonance imaging [MRI], nuclear medicine, and ultrasound) accounted for approximately 35% of all imaging studies (Smith-Bindman et al., 2012).
- From 1980 to 2006, the proportion of radiation exposure that is attributable to medical sources increased from 17% to 53% (Mettler et al., 2009).
- In 2006, while CT scans only accounted for approximately 17% of all radiologic procedures performed in the United States, they accounted for over 65% of the total effective radiation dose from radiologic procedures (Mettler et al., 2009).
- In 2006, the estimated per-capita effective radiation dose for radiologic procedures in the United States was nearly 20% higher than the average for other well-developed countries (Mettler et al., 2009).

Diagnostic imaging was prioritized as a topic area for measure development due to a high level of utilization, rising costs, and the need for measures to help promote appropriate use of imaging and improve outcomes.

Opportunity for Improvement

Since the Society of Radiologists in Ultrasound published their consensus statement (Johnson et al., 2011) for the management of adnexal cysts in 2010, several studies (Harris et al., 2012; Ghosh & Levine, 2013; Rosenkrantz & Kierans, 2014) have been published evaluating adherence to the recommendations. Adherence to the follow-up recommendations for ovarian cysts varies widely from 59% to 95%. Evidence shows that quality improvement initiatives can be effective at improving adherence with the recommendations by up to 7% and reducing the number of pelvic sonograms performed by 27% (Harris et al., 2012; Modesitt et al., 2003).

Evidence for Additional Information Supporting Need for the Measure

American College of Radiology (ACR), American Medical Association-convened Physician Consortium for Performance ImprovementÂ® (PCPIÂ®), National Committee for Quality Assurance (NCQA). Diagnostic imaging performance measurement set. Reston (VA): American College of Radiology (ACR); 2015 Feb. 58 p. [89 references]

Ghosh E, Levine D. Recommendations for adnexal cysts: have the Society of Radiologists in Ultrasound consensus conference guidelines affected utilization of ultrasound?. Ultrasound Q. 2013 Mar;29(1):21-4. PubMed

Harris RD, Javitt MC, Glanc P, Brown DL, Dubinsky T, Harisinghani MG, Khati NJ, Kim YB, Mitchell DG, Pandharipande PV, Pannu HK, Podrasky AE, Royal HD, Shipp TD, Siegel CL, Simpson L, Wall DJ, Wong-You-Cheong JJ, Zelop CM, Expert Panel on Women's Imaging. ACR Appropriateness CriteriaÂ® clinically suspected adnexal mass. Reston (VA): American College of Radiology (ACR); 2012. 13 p. [44 references]

Johnson PT, Horton KM, Megibow AJ, Jeffrey RB, Fishman EK. Common incidental findings on MDCT: survey of radiologist recommendations for patient management. J Am Coll Radiol. 2011 Nov;8(11):762-7. PubMed

Mettler FA, Bhargavan M, Faulkner K, Gilley DB, Gray JE, Ibbott GS, Lipoti JA, Mahesh M, McCrohan JL, Stabin MG, Thomadsen BR, Yoshizumi TT. Radiologic and nuclear medicine studies in the United States and worldwide: frequency, radiation dose, and comparison with other radiation sources--1950-2007. Radiology. 2009 Nov;253(2):520-31. PubMed

Modesitt SC, Pavlik EJ, Ueland FR, DePriest PD, Kryscio RJ, van Nagell JR. Risk of malignancy in unilocular ovarian cystic tumors less than 10 centimeters in diameter. Obstet Gynecol. 2003 Sep;102(3):594-9. PubMed

Rosenkrantz AB, Kierans AS. US of incidental adnexal cysts: adherence of radiologists to the 2010 Society of Radiologists in Ultrasound guidelines. Radiology. 2014 Apr;271(1):262-71. PubMed

Smith-Bindman R, Miglioretti DL, Johnson E, Lee C, Feigelson HS, Flynn M, Greenlee RT, Kruger RL, Hornbrook MC, Roblin D, Solberg LI, Vanneman N, Weinmann S, Williams AE. Use of diagnostic imaging studies and associated radiation exposure for patients enrolled in large integrated health care systems, 1996-2010. JAMA. 2012 Jun 13;307(22):2400-9. PubMed

Extent of Measure Testing

Some of the measures in this set are being made available without any prior testing. The Physician Consortium for Performance Improvement (PCPI) recognizes the importance of testing all of its measures and encourages testing of the diagnostic imaging measurement set for feasibility and reliability by organizations or individuals positioned to do so. The *Measure Testing Protocol for PCPI Measures* was approved by the PCPI in 2010 and is available on the PCPI Web site (see Position Papers at www.physicianconsortium.org); interested parties are encouraged to review this document and to contact PCPI staff. The PCPI will welcome any opportunity to promote the initial testing of these measures and to ensure that any results available from testing are used to refine the measures before implementation.

Evidence for Extent of Measure Testing

American College of Radiology (ACR), American Medical Association-convened Physician Consortium for Performance ImprovementÂ® (PCPIÂ®), National Committee for Quality Assurance (NCQA). Diagnostic imaging performance measurement set. Reston (VA): American College of Radiology (ACR); 2015 Feb. 58 p. [89 references]

State of Use of the Measure

State of Use

Current routine use

Current Use

not defined yet

Application of the Measure in its Current Use

Measurement Setting

Ambulatory/Office-based Care

Ambulatory Procedure/Imaging Center

Hospital Inpatient

Professionals Involved in Delivery of Health Services

not defined yet

Least Aggregated Level of Services Delivery Addressed

Individual Clinicians or Public Health Professionals

Statement of Acceptable Minimum Sample Size

Does not apply to this measure

Target Population Age

Age greater than or equal to 18 years

Target Population Gender

Female (only)

National Strategy for Quality Improvement in Health Care

National Quality Strategy Aim

Better Care

National Quality Strategy Priority

Health and Well-being of Communities
Prevention and Treatment of Leading Causes of Mortality

Institute of Medicine (IOM) National Health Care Quality Report Categories

IOM Care Need

IOM Care Need

Getting Better

Staying Healthy

IOM Domain

Effectiveness

Data Collection for the Measure

Case Finding Period

Unspecified

Denominator Sampling Frame

Patients associated with provider

Denominator (Index) Event or Characteristic

Clinical Condition

Diagnostic Evaluation

Patient/Individual (Consumer) Characteristic

Denominator Time Window

not defined yet

Denominator Inclusions/Exclusions

Inclusions
All final reports for ultrasound studies of the pelvis for women aged 18 and older with a simple ovarian cyst* less than 5.0 cm noted

**Simple Ovarian Cyst*: The definition of a simple cyst by ultrasound is a cyst that has been well-evaluated (typically by transvaginal sonography) and has a thin wall, is anechoic, and has enhanced through transmission.

Exclusions
Patients known to be menopausal

Exceptions
Documentation of medical reason(s) that follow-up imaging is needed (e.g., patient has a known malignancy that can metastasize, other medical reason[s])

Exclusions/Exceptions

not defined yet

Numerator Inclusions/Exclusions

Inclusions
Final reports of ultrasound studies of the pelvis with follow-up imaging recommended

Exclusions
Unspecified

Numerator Search Strategy

Fixed time period or point in time

Data Source

Electronic health/medical record

Imaging data

Paper medical record

Registry data

Instruments Used and/or Associated with the Measure

Unspecified

Computation of the Measure

Measure Specifies Disaggregation

Does not apply to this measure

Scoring

Rate/Proportion

Interpretation of Score

Desired value is a lower score

Allowance for Patient or Population Factors

not defined yet

Standard of Comparison

not defined yet

Identifying Information

Original Title

Measure #13: appropriate follow-up imaging for incidental simple ovarian cysts.

Measure Collection Name

Diagnostic Imaging Performance Measurement Set

Submitter

American College of Radiology - Medical Specialty Society

Developer

American College of Radiology - Medical Specialty Society

National Committee for Quality Assurance - Health Care Accreditation Organization

Physician Consortium for Performance ImprovementÂ® - Clinical Specialty Collaboration

Funding Source(s)

Unspecified

Composition of the Group that Developed the Measure

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National Committee for Quality Assurance: Mary Barton, MD

Financial Disclosures/Other Potential Conflicts of Interest

None of the members of the Diagnostic Imaging Work Group had any disqualifying material interest under the Physician Consortium for Performance Improvement (PCPI) Conflict of Interest Policy.

Adaptation

This measure was not adapted from another source.

Date of Most Current Version in NQMC

2015 Feb

Measure Maintenance

This measure is reviewed and updated every 3 years.

Date of Next Anticipated Revision

2018

Measure Status

This is the current release of the measure.

The measure developer reaffirmed the currency of this measure in March 2017.

Measure Availability

Source available from the American College of Radiology (ACR) Web site .

For more information, contact ACR at 1891 Preston White Drive, Reston, VA 20191; Phone: 703-648-8900; E-mail: info@acr.org; Web site: www.acr.org .

NQMC Status

This NQMC summary was completed by ECRI Institute on October 13, 2015. The information was verified by the measure developer on November 19, 2015.

The information was reaffirmed by the measure developer on March 3, 3017.

Copyright Statement

Production

Source(s)

American College of Radiology (ACR), American Medical Association-convened Physician Consortium for Performance ImprovementÂ® (PCPIÂ®), National Committee for Quality Assurance (NCQA). Diagnostic imaging performance measurement set. Reston (VA): American College of Radiology (ACR); 2015 Feb. 58 p. [89 references]

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